

## PATENT COOPERATION T

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 INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
 (Chapter II of the Patent Cooperation Treaty)

PCT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PCT040920		FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/CN2004/000469	International filing date (day/month/year) 11.May 2004 (11.05.2004)	Priority date (day/month/year) 11.May 2003 (11.05.2003)	
International Patent Classification (IPC) or national classification and IPC IPC <sup>7</sup> F04C18/02			
Applicant ZHOU,Jinsong etc			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>2</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 29.Nov 2004 (29.11.2004)		Date of completion of this report 26.Oct 2005 (26.10.2005)	
Name and mailing address of the IPEA/CN The State Intellectual Property Office, the P.R.China, 6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China 100088		Authorized officer  	
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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/CN2004/000469

## Box No. I Basis of the report

## 1. With regard to the language, this report is based on:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-5 \_\_\_\_\_ as originally filed/furnished
- pages \* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages \* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- pages \_\_\_\_\_ as originally filed/furnished
- pages \* \_\_\_\_\_ as amended (together with any statement) under Article 19
- pages 1-2 \_\_\_\_\_ received by this Authority on 29.Nov 2004 (29.11.2004)
- pages \* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- pages 1-5 \_\_\_\_\_ as originally filed/furnished
- pages \* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages \* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/CN2004/000469**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement:

Novelty (N)	Claims	1-18	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	1-18	YES
	Claims	NONE	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims	NONE	NO

## 2. Citations and explanations (Rule 70.7)

D1: JP,A,11270474

D2: CN,A,1112988

The closest prior art is represented by D1 and D2 .

The closest prior art have not disclosed the product claimed by the claims 1-5 and the manufacture methods of the product claimed by the claims 6-18, thus the claims 1-18 are considered as novelty, therefore the claims 1-18 meet the requirements of PCT Art. 33(2).

D1 discloses that a stationary scroll is made of a thermosetting resin material to reduce noise. However, the application can increase sealing performance, and compensation each other in axial and radial direction during orbiting cooperatively by making one of the orbiting scroll plate and the fixed scroll plate or both thereof made of materials with elasticity and plasticity property. Moreover, the manufacture methods of the product disclosed by D2 are different from that claimed by the claims 6-18, thus, the claims 1-18 are not obvious relative to the prior arts, therefore, the claims 1-18 meet the requirements of PCT Art. 33(3).

Because the subject matter of claims 1-18 involves industrial applicability, claims 1-18 meet the requirements of PCT Art. 33(4), indeed.

**Box No. VII** Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

1. The claim 8 is same as the claim 7, causing the whole claims is not concise.
2. A punctuation has not been used in the end of the claim 11, and add redundantly a word 'chang'.
3. The adjunctive features of the dependent claim 2 exist also in the claim 1, causing repeatedly defining the same technical feature, thereby the claim 2 is not clear.

权 利 要 求

1. 一种涡旋盘，包括由涡旋形盘体及相应的底板组成的动涡旋盘、静涡旋盘；其特征是：动涡旋盘和静涡旋盘或其中任一涡旋盘用具有弹性变形或塑性变形或同时具有弹性变形和塑性变形的材料做成，利用其材料所具有的弹性变形或塑性变形的特性，当动涡旋盘和静涡旋盘在互相配合运转时通过挤压作用使材料变形，降低了两个涡旋盘接触表面的不平度，增大了接触面，从而增加了两涡旋盘接触面的密封效果和轴向及径向的相互补偿的目的。
2. 根据权利要求 1 所述的涡旋盘，其特征是：动涡旋盘或静涡旋盘或者动涡旋盘和静涡旋盘用具有弹性变形或塑性变形或同时具有弹性变形和塑性变形的材料做成。
3. 根据权利要求 1 所述的涡旋盘，其特征是：具有弹性变形或塑性变形的材料为聚氨酯、聚四氟乙烯或合成橡胶。
4. 根据权利要求 1 所述的涡旋盘，其特征是：动涡旋盘和静涡旋盘或其中任一涡旋盘用具有弹性变形或塑性变形或同时具有弹性变形和塑性变形的材料涂敷于骨架表面。
5. 根据权利要求 4 所述的涡旋盘，其特征是：在动涡旋盘和静涡旋盘的骨架上作出许多孔，该孔可以是透孔，也可以是盲孔，用以增加所述涂敷材料的强度。
6. 涡旋盘的制造方法，其特征是：包括以下步骤：  
用薄板做成涡旋形盘体；  
固定于金属底板上；  
在涡旋形盘体的外表面和涡旋形盘体与金属底板间槽底注塑或涂覆弹性材料，形成涡旋盘。
7. 根据权利要求 6 所述的涡旋盘的制造方法，其特征是：所述的薄板上开有多个孔。
8. 根据权利要求 6 所述的涡旋盘的制造方法，其特征是：所述的薄板上开有多个孔。

9. 根据权利要求 6 所述的涡旋盘的制造方法, 其特征是: 所述的弹性材料为聚四氟乙烯、聚氨酯或合成橡胶。

10. 涡旋盘的制造方法, 其特征是: 包括以下步骤:

薄板上涂覆弹性材料;

5 再做成涡旋形盘体;

然后固定于金属底板上, 形成涡旋盘。

11. 根据权利要求 10 所述的涡旋盘的制造方法, 其特征是: 所述的薄板上开有多个孔

10 12. 根据权利要求 10 所述的涡旋盘的制造方法, 其特征是: 所述的薄板为金属或塑料。

13. 根据权利要求 10 所述的涡旋盘的制造方法, 其特征是: 所述的弹性材料为聚四氟乙烯、聚氨酯或合成橡胶。

14. 涡旋盘的制造方法, 其特征是: 包括以下步骤:

在金属底板上, 采用模注方式, 形成涡旋形盘体骨架;

15 然后在骨架及金属底板注塑或涂覆弹性材料。

15. 根据权利要求 14 所述的涡旋盘的制造方法, 其特征是: 金属底板和涡旋形盘体骨架采用一体模注方式形成。

16. 根据权利要求 14 所述的涡旋盘的制造方法, 其特征是: 所述的弹性材料为聚四氟乙烯、聚氨酯或合成橡胶。

20 17. 涡旋盘的制造方法, 其特征是: 在金属底板上, 用弹性材料采用模注方式, 形成涡旋盘。

18. 根据权利要求 17 所述的涡旋盘的制造方法, 其特征是: 所述的弹性材料为聚四氟乙烯、聚氨酯或合成橡胶。

**第VIII(ii)栏 声明：有权申请和被授予专利**

声明必须与规程 212 条的标准语句一致；参见对于 VIII、VIII(i)到(v) (概述)的说明和专门对于 VIII(ii)的说明。如果不使用本栏，则请求书中不应包括此页。

当根据细则 4.17(iv)的声明不适用时，在国际申请日时，申请人有权申请和被授予专利的声明(细则 4.17(ii)和 51 之二.1(a)(ii))：

关于本国际申请

周劲松、周广成基于下列各项有权申请和被授予专利

(I) 周劲松、周广成作为发明人是有权的。

(II) 本声明是对除美国以外的所有指定国的。

☐ 本声明下转声明续页中“续第 VIII (ii) 栏”。

替换页